Remarks

Claims 1-29 are pending in the application. Claims 1-5, 7, 8, 10-12, 15-20 and 23-29 are rejected. Claims 6, 9, 13, 14, 21 and 22 are objected to. All rejections and objections are respectfully traversed.

Claims 14 and 29 are objected to due to informalities. The claims have been amended to correct those informalities.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 has been amended to overcome the rejection.

The invention provides a solution for the problem of viewing 'secret' data in public place. This is generally known as the field of steganography, (secret writing), based on the work of Johannes Trithemius, circa 1500 AD. The Applicants suggest the Examiner familiarizes with the field of steganography to understand the invention.

Claims 1, 7-8, 11, 15, 18-20, 25 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tourai (US 6,784,887) in view of Hiroaki (US 6,661,425).

Tourai generates a data image and a mask image. First the Examiner states "wherein the mask image (of Tourai) is a *negation* of the data image." Tourai

does not support the Examiner's conjecture that his mask image is a negation of the data image.

Then, the Examiner admits that Tourai does explicitly disclose a mask image that is a negation of the data image.

In the ordinary meaning of the word, 'negation' means: "the action or logical operation of negating or making negative."

The Tourai mosaic image is not a negation. The Tourai pattern image is not a negation. The Tourai edge image is not a negation.

In the application, a number of ways of achieving the claimed negation are described in detail. "The negation can be done by an inverter." page 4, line 20. "If the data frames 101 are binary or two-tone image, then a negation simply means turning all white components of the data frames, e.g., pixels with zero or off values, to black components in the negative frames, e.g. pixels with one or on values." page 6, line 10. "If the data frame use a gray scale, then the negation simply subtracts the pixel values of the data frames from the maximum pixel value, i.e., 255 for an eight bit pixel value." page 6, line 13. "In the case of color images, the negation is performed independently on each of the color channels, e.g., red, green, and blue for a "RGB" display system. Thus, for a system that display each of red, green, and blue at 256 levels, such as commonly available 24-bit (3x8) color mode display devices, each pixel of the red negative frame is displayed at a value of 255 minus the corresponding red data frame pixel value." page 6, line 24.

The purpose of the negation is to provide "[a] method for displaying an image *only* to an authorized user," see claim, while at the same time unauthorized users see nothing.

With the Tourai device everybody sees nothing. Tourai is useless for solving the stated problem for displaying an image only to an authorized user. With the claimed device, only the authorized user sees the displayed image, while at the same time unauthorized users see nothing but a gray image.

The Examiner states that the Applicants negation does not "solve any stated problem."

Perhaps, with all due respect, the Examiner does not clearly understand the stated problem to be solved by the invention.

In the opening paragraph of the application the stated problem is clearly stated as: "With the advent of desktop and portable computer systems, the **problem of maintaining the confidentiality of secure data** is increased. This is a **particular problem** for laptop computers and hand-held personal digital assistants (PDAs) that are frequently used **in public locations. Data security is also a problem** for other display systems, such as automated teller machines, and Internet terminals in **public locations**, such as Internet shops and airports." and "However, enhanced readability of displayed data increases the **risk of confidential information being viewable by unauthorized persons** when portable displays are used in **public locations**."

Thus, simply stated, the stated problem is to display images only to authorized users, while at the same time, preventing unauthorized users from seeing the images. This problem is particularly significant when handheld computing devices or ATMs are used in public places such as airplanes and airports, see above and specification.

See Field of the Invention, "The present invention relates generally to the field of data security, and more particularity to **displaying secure data on display devices in public locations**."

The 'problems' referenced by the Examiner are problems with the *prior art* solutions.

The Applicants respectfully request the Examiner to distinguish the problem solved by the invention, and the problems with the prior art solutions.

There is no requirement that the Applicants must disclose solutions to prior art problems. The invention is not interested with fixing prior art solutions to problems. The problems of those solutions are beyond repair. A completly new approach is required, see claims of present invention.

For example, at page 2, line 20, et seq., the section cited by the Examiner, the Applicants describe the problem with the solution of McManis in US Patent 5,629,984. In that system, people can still perceive images. That is not a stated problem to be solved by the invention, instead that is a problem with a prior art solution.

The Examiner states that the Applicants do not disclose that the negation of image data solves any stated problem. With all due respect, this is erroneous. Perhaps the invention does solve the problem that "most people can perceive images even is the relative intensity of darkest elements is only about 1/100 that of the brightest elements," see page 2, line 25 et seq.

Recall, the real problem to be solved (not the prior art problems) is to preserve the privacy of secure data in public places, see above.

Because the mask is a negation of the data image, the perceived image is 'gray'. That is, the solution exactly provides the desired result.

The Applicants state at page 4, line 25 "The net result is a featureless neutral "gray" image 103 because the overall perceived intensity of the image is half-way between sum of the intensities of the data and mask frames. **Thus, privacy of the displayed information is preserved.**" How clear is that? Only because the data and the mask images are negations of each other will the sum of the intensities of the data and mask frames be half-way between black and white so that the perceived image is grey. The clever solution here lies in the negation, and the sequential displaying of the data image and its negation.

And in the Summary, "[t]he opening and shutting of an optical shutter device is synchronized to the displaying of the selected images so that only the data image is perceived by the authorized user viewing the display device through the optical shutter device, and a gray image is perceived by an unauthorized user viewing the data and mask images directly."

At page 11, line 20, "If the images is viewed by the unaided eye, then it appears uniformly white. If the image is viewed through standard polarizing lenses, as for the prior art InvisiView device, it is still unreadable. However, when the image is viewed through the optical shutter device 410 modulated synchronously to the image 400, the image will become visible."

The Examiner states that Hiroaki discloses a negation of a data image at column 6.

FIG. 7*b* shows an image obtained by extracting the superposing information from the original image to form the superposing image, in accordance with the information for designating the superposing area **10**. If the area other than the superposing information is black in color, for example, if the values of R, G and B are all 0 or near 0, subsequent image processing is facilitated. In the case of the superposed image display means **124**, employing the half-mirror, solely the superposing information can be displayed in superposition on the base image simply by demonstrating this superposing image on the display. It is noted that, in FIG. **7**, "black" is represented by "dots".

FIG. 7*c* shows an example of a mask pattern. In setting the mask pat tern, it is possible to use black pixels and non-black pixels for the masked portion and for the unmasked portion, respectively, or to use non-black pixels and black pixels for the masked portion and for the unmasked portion, respectively.

The mask pattern is at the same position as that of the superposing information on the original image. The purpose of doing this is to erase the display on the original image side in the superposing portions of the superposing information and the original image produced on superposing the, superposing information on the original image. This processing gives such a result that the superposing information is extracted and floated from the original image.

Applicants are curious about which words above the Examiner thinks mean or suggest negation. Unless the Examiner can point out what exactly causes negation in Hiroaki, the rejection should be withdrawn. Applicants vigorously assert that there is no negation anywhere in Hiroaki.

Anyway, it makes no sense in combining Hiroaki with Tourai. Hiroaki is interested in improving information viewing.